

Deep-Time Data Infrastructure: Integrating Our Current Geologic Databases

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As our knowledge of Earth's geologic history grows, we require more robust methods of sharing immense amounts of data. Various databases across numerous disciplines have been widely utilized to offer extensive information on very specific pieces of both Earth's history and its current state, ie. fossil record, rock composition, proteins, etc. In order to gain a deeper understanding of our planet's past we must combine the resources present in our online communities. These databases could be a powerful force in identifying previously unseen correlations if used in tandem rather than as separate entities. Creating a unifying site that provides links to these databases will aid in our ability as a collaborative scientific community to utilize our findings on a larger scale. The Deep-Time Data Infrastructure (DTDI) is currently underway as part of a larger effort to accomplish this goal. DTDI will not be a new database, but an integration of existing resources. This research is the beginning step in the DTDI program. To create this infrastructure, all current geologic and related databases had to be identified and their schema recorded. Using variables from their combined records, we are able to determine the best way to integrate them using common factors. The Deep-Time Data Infrastructure will allow geoscientists to bridge gaps in data and further our understanding of our Earth's history.